

The Economic Monitoring Network for Private Forests in Hungary

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Abstract The private forestry sector in Hungary was reintroduced in the early 1990s, as a part of the initial economic reform package aimed at transforming the economy from central planning to a market economy. The fundamental changes required a complete restructuring of the forestry sector, which is still going on, with sound information becoming ever more important. The Economic Monitoring Network for Private Forests in Hungary (EMN-PF) is supporting a price and cost reference database, financial analysis of forestry processes, forestry holding analysis and estimation of the economic output of the private forestry sector. Each output is based on data collecting methods that are balanced between accuracy and ease of data collection. EMN-PF applies surveys and uses open databases as data sources. Forest owners' and integrators' estimates are an easy way of collecting data, but the accuracy of data is difficult to control. The analysis of forest holdings can be based on the annual financial reports of forest enterprises with pure forest activity. These reports are already existing documents, which therefore are easy to collect in large numbers, but do not provide highly detailed data. Based on the National Forest Inventory and the results of the financial analysis, the economic output of the private forestry sector can be estimated.

Keywords Data collecting methods · Forest integrator · Standard gross margin · Standard output

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Introduction

At the beginning of the communist era in Hungary large agricultural estates were nationalized, while small estates were forced into cooperatives, the original owners becoming members of the cooperatives. Since the beginning of the political changes in Hungary in 1989, privatisation was on the agenda as one of the first steps towards a market economy. Besides its economic importance, privatisation was an important political issue, to satisfy the public's need to regain their property which had been communized between the early 1950s and the early 1960s.

The most obvious way of privatisation would have been land restitution, in which the original owners or their inheritors could have reclaimed their original property. This was rejected however, because it was deemed too complicated to deal with the problems arising from the extensive land-use alterations over large areas, and the urbanization which had changed the lifestyles of many people.

The privatization process included both the *allotment* of the agricultural cooperatives' land among their members, and the *auctions* of the state-owned land. Payment in these auctions was via a voucher, which was given as compensation to those who suffered financial losses or moral indignity for political reasons.

This privatization process allowed people to choose which lots they would re-acquire, and gave room for market forces by applying auctions. However, during the implementation, people tended to make covert agreements to avoid competing with each other. These agreements were most commonly based on the idea of sharing land lots, so that the differences in site quality and the value of the standing timber did not play a role. The result of this method was a highly fragmented forest property structure and a high proportion (estimations to be 90–93%) of common ownership (Páll 1997; Jáger 2008). As a result of this process approximately 40% (or 750,000 ha) of the forest area was privatized within 3–4 years and it took an additional 3–4 years to update the land registry.

The development of the private forestry sector started very slowly, partly because forest policy followed the model of large-scale forest management, which has a long tradition in Hungary from the early twentieth century (Lengyel 1999). Therefore the main policy objective for private forests was to legally force the new owners to form common management organizations on larger forest blocks, even though this was clearly against the will of the new owners. Regulation changed gradually, but as of 2000 approximately 384,000 ha (50% of total private forest area) was legally unmanaged. By 2003 this had reduced to about 279,000 ha (34%) of private forest. The enforcement of joint management forms coupled with the lack of capital, equipment and living traditions of forestry among forest owners led to forest operations being carried out mainly by contractors.

Since forest owners and their forest management organizations heavily relied on both contractor work and forest professionals as information sources, from 2000 forest service centres were established. These forest service centres were private entities (companies or self-employed persons) called 'integrators'. The institution of forest integrator fits well with the definition of strategic alliances (Sharp et al. 2004), where the forest integrator provides expertise by consulting and the partner forest

enterprises can benefit from the integrator's marketing skills and business experience. The consulting service is based on a long-term contract, while the other services of the integrator such as contractor work and timber trade are coordinated by the current market.

Establishment and Description of the EMN-PF

Apart from the national forest inventory, which keeps full records on natural conditions and the natural output of the forestry sector, only occasional surveys were conducted on private forestry activity, and economic information was particularly lacking. In the early 2000s the Farm Accountancy Data Network (FADN) was being established as a prerequisite to Hungary's accession to the European Union. This network, however, primarily collects information from agricultural holdings and provides insufficient data about private forestry. In 2003 the Ministry of Agriculture decided to launch a separate network called the 'Economic Monitoring Network for Private Forests' (EMN-PF) with the University of West Hungary appointed as the host institution.

In order to organize a widespread network in the first year, data collection was based on forest integrators. They are an ideal information source because of their relatively large operating area (500 ha managed plus 2000 ha integrated per integrator). Since most of these networks consist of 20–50 forest enterprises, the use of forest integrators allows the sample size to be expanded.

The network applies various data collection methods and applies them on overlapping samples of forest management units. Consequently, the size of the network can only be described by the total number of members, which was 95 in 2006. These members managed approximately 36,000 ha of forest, but because many of them are integrators providing expertise, their full operation area is also relevant, which was approximately 88,000 ha. Although the indicated area does not refer to direct data collection, almost 10% of the private forest area is involved in the surveys in various ways. Table 1 presents major characteristics of the EMN-PF sample, including the map of the members' locations.


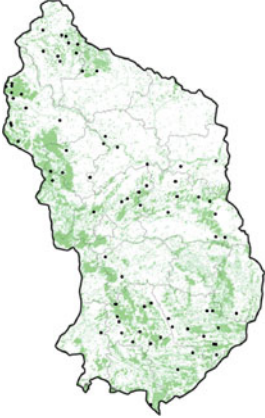
Data Sources and Data Collection

To recruit participants in a data collection program a large part of the population is usually invited to take part in surveys via direct mailing. Approximately 70 forest integrators were invited, together with forest associations managing more than 50 ha of forest land (which included approximately 600 enterprises).

Prices and costs are collected from forest integrators through mailing of a survey questionnaire. This information is based on estimates made by the data providers rather than observations of actual market transactions. Questions are included about personnel, equipment, trading channels as well as the present business state and future prospects of the integrator. A similar questionnaire is used for forest associations, but excluding integrator-specific questions.

Financial data of forest associations is obtained from an open database of annual financial reports. The National Forest Inventory provides statistics of forestry

Table 1 Profile of the economic monitoring network for private forests in Hungary

Profile feature	2003	2006
Map of Hungary with the location of the sample forest enterprises		
Number of members	37	95
Area managed by members	11,500 ha	36,000 ha
Area consulted by members		88,000 ha

activities. Data from the latter two sources are purchased in a ready-to-use format from a financial data trading company and from the State Forestry Service respectively. The forest holdings to which the data refer to are not involved in this data collecting activity.

Output and Use of the EMN-PF Data

The rationale for running an economic monitoring network in the field of private forests is that there is no other source of economic information of this kind, which is credible and independent from interest groups. The main beneficiaries of this network are the policy-making, research, education and private forestry sector. The network has to meet all their information needs.

The timber price and cost reference database are designed to provide primary information on the price of timber products and the costs of forestry contract work. The output data are categorized by geographic region and tree species and represent the arithmetic average of the respective dataset without any weighting.

The value of the database was proven in its first years. Data, even from large forest enterprises, showed a high spread suggesting that the information flow in this field is not satisfactory. The usefulness of a price and cost database depends heavily on the sample size, especially when the spread of the dataset is high. Such a database can be used mostly by forestry practitioners, researchers and for education.

Building upon the elementary price and cost information financial analyses were conducted of whole forestry processes (e.g. afforestation, harvesting, thinning etc.). These processes consist of a set of elementary forestry actions. Table 2 presents an example of costs of afforestation, which consists of soil preparation, planting of the seedlings, in some cases cutting back the seedlings, weed control etc. In order to make the forest processes comparable tree species and geographic regions are recorded as group criteria and the revenues as well as costs of the processes are expressed in per-unit monetary values, e.g. HUF/m³ or HUF/ha.¹ In addition to being used in further calculations on sector level this information is also useful in developing subsidy schemes.

In Table 2 balances of the afforestation subsidies against costs are also calculated. The natural conditions of the regions within the country show distinctive characteristics and the forestry technologies also differ according to species. Costs of afforestation by region and by species are therefore considerably different, while the subsidy does not reflect these differences.

On the level of forest enterprise the main goal of analysis is to describe the economic situation of those enterprises as entities. This includes for example equipment, employment, capital adequacy, profitability and taxation. This is the level where general input/output analysis can be carried out and forestry as an activity can be described as a whole. Information from this level can be used by the management of the enterprises for benchmark comparison and by decision-makers who are interested in the financial viability of the enterprises and in the justification of subsidies.

¹ HUF: Hungarian Forint.

Table 2 Example of financial analysis of forestry processes in EMN-PF. Artificial afforestation on flatlands (HUF 1000/ha)

Species	Subsidy	Region 1		Region 2		Region 3	
		Costs	Balance	Costs	Balance	Costs	Balance
Oak	280	568	−288	556	−276	463	−183
Acacia	120	359	−239	442	−322	246	−126
Hybrid poplar	133	447	−314	474	−341	488	−355

As of 05.01.2010 HUF268.5 was equivalent to €1

Combining the results of the financial analysis on forestry processes level and the natural output on the sector level, the economic output of the whole forestry sector can be calculated. Other official sources—e.g. the Central Statistical Office or the Hungarian Tax and Financial Control Administration—collect information in which production lines are not separated and income is not consolidated. This is why a more accurate estimation method is needed.

Discussion

In order to separate costs and revenues of the various production lines within the enterprise, such as forestry and other business activities, harvesting and reforestation, a cost centre accounting would have been needed. But neither forest accounting standards nor sufficient financial sources were available for this purpose. A custom made, accounting-based information system would have been too costly to create because the potential member enterprises were both unwilling to undertake the additional administrative work and resisted revealing their economic situation in detail. In order to gain the confidence of the data providers a basic principle was applied from the beginning: *‘to monitor, not to supervise’*. In practice this means that the dataset submitted by the forest enterprises is either deliberately incomplete or not detailed enough to oversee their whole range of activities.

Prices and costs are highly sensitive information, especially when they refer to actual transactions. Furthermore, it requires a competent person to provide reliable data, who can cover a large area where various types of activities take place and who is active in forestry markets. Forestry integrators fulfil these requirements, so they were asked to report on a set of prices and indicators.

Almost the same method is applied to forestry processes, where the integrators provide data to calculate revenues and costs of predefined processes considering the actual technology they typically apply. The low level of own work in the private forestry sector considerably simplifies the data collection and makes the imputed cost items less important.²

The most difficult part of data collection within the network is producing sound data about individual enterprises because these often combine agriculture and other

² A discussion of the problems of imputed data is provided by Sekot (1998).

Table 3 Summary of data sources and output information of economic monitoring network for private forests

Output information of the EMN-PF	Sources of data	Advantages	Disadvantages
Price and cost reference database	Estimates of integrators via questionnaire	Easy data collection	Results are not weighted
Financial analysis of forestry processes	Estimates of integrators via questionnaire	Easy data collection	Accuracy of estimates cannot be controlled
Forest holding analysis	Annual financial report of forest enterprises with pure forest activity	Large number of enterprises can be involved Reports already exist	Depth of analysis is limited
Estimation of the economic output of the private forest sector	National Forest Inventory and results of financial analysis	Full census of forest activity	Complicated calculation

types of activities with forestry and do not keep separate records about each. This is the reason why already existing records (e.g. original book-keeping systems, tax returns and other management reports) have limited use for analyzing forestry activity. Data providers can be asked to make estimates, which require no exhausting administration, but the resulting accuracy is questionable because these data are highly complex. As a compromise between ease of data collection and reliability of data, forest enterprises are selected that deal with forestry production exclusively and use their annual financial reports that are already available. This method does not substitute for cost centre accounting, but allows most of the enterprise-level analysis to be carried out. Table 3 summarizes the advantages and disadvantages of the various data collecting methods.

In the first years of operation, EMN-PF conducted several surveys for specific purposes besides the regular surveys. These studies focused mainly on forest owners' attitudes towards their forest property with special emphasis on those who owned unmanaged forests. These surveys provided valuable data, but blurred the original mission to a great extent and the surveyed forest enterprises lost focus about what they were required to do in the long run.

Since providing data is not legally mandatory for forest enterprises, in the 5 years history of the EMN-PF the most critical aspects were to create a sufficient sample size and to ensure high data quality. Forest enterprises are encouraged to join the network with data feedback in the form of the reference price and cost database. Some benchmark comparisons are also available. Moreover, data providers are given compensation for additional work to deliver the data.

Data quality is difficult to evaluate because there is no quantitative limit to achieve or standards with which to compare. To enhance data quality, personal interviews are conducted where a thorough explanation is given to the data providers on what data are needed and how they are required to report these data. Personal contact builds trust, and data providers understand the task better. But the

most important benefit is the provision of information on context factors and current issues about local forestry practice.

Creating a sufficiently large sample and ensuring data quality are the core tasks of managing data collecting networks. However, active management of these aspects would not be enough to achieve satisfactory results, if the network had no strategy and no stable budget for subsequent years. Since 2003, when the initial survey took place, there have been no consecutive years when the same set of variables could be used, due to the funding procedure of the network.

Usually an open call for tenders was announced in early summer and the annual contract was signed in mid-autumn, allowing approximately 2–3 months until the deadline for submitting survey results to the Ministry in early December. After finishing the annual survey the data providers could not be promised that the network would continue in the next year. So as each new survey started the timeframe had to be taken into account (which strongly limited the area of surveys) along with the Ministry's changing ideas on which fields to investigate. Therefore the operation of the network looked much more like a series of surveys, rather than a standard survey repeated annually.

Further Prospects and Concluding Comments

The role of the EMN-PF in the development of the private forestry sector in Hungary is a subjective issue, but from an economic and organizational point of view, it has clearly been the most reliable information source to forestry stakeholders and has provided the widest range of information. Thus the EMN-PF has served the information needs of the Ministry, interest groups, research and education, private forest owners as well as the forestry professionals.

In addition to the economic information service for stakeholders, an attempt has been made to disseminate information to a wider audience. Building upon the large number of non-member forest enterprises and forest professionals with whom EMN-PF is in contact, the 'Information Centre for Private Forests' has been launched with the aim of disseminating various kinds of information, relying not only on its own sources, but also on third party materials. This was justified by the fact that qualitative surveys identified deficiencies in the overall information flow within the forestry sector.

Since the farm accountancy data network began operating in Hungary the standard gross margin (SGM) (as defined in EUROSTAT 2003) has been increasingly used in subsidy schemes to calculate the economic size of farms. There is no definition of SGM in forestry, which consequently excluded private forestry enterprises from subsidy schemes that use minimum economic size of applicants as a criterion. As one of the newest attempts to improve integration of the EMN-PF into national processes, a simple method of calculating SGM has been worked out, and this method is now available for decision-makers.

SGM and farm typology applied in the European Union are being reformed and the standard output (SO) will be the new tool for this purpose. SO is the monetary value of agricultural gross production at farm-gate price, which is easier to calculate than SGM and provides a comprehensive basis for cross-sector analysis. This

typology tool is not directly applicable to forestry, but in the future it should be considered as a link to both the national level and Europe-wide harmonisations.

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